



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/595,279 | 04/04/2006 | Hiraku Akiho | 09792909-6676 | 6663 |

26263 7590 01/02/2008
SONNENSCHN NATH & ROSENTHAL LLP
P.O. BOX 061080
WACKER DRIVE STATION, SEARS TOWER
CHICAGO, IL 60606-1080

EXAMINER

TRAN, CHUC

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2821

| MAIL DATE | DELIVERY MODE |
|-----------|---------------|
|-----------|---------------|

01/02/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|-------------------------------|------------------------------|--|
| Office Action Summary | Application No. 10/595,279 | Applicant(s) AKIHO ET AL. | |
| | Examiner Chuc D. Tran | Art Unit 2821 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>4/4/06;10/11/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 2004-228559, filed on 8/4/04.
2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The examiner does not understand how the recess is provided on a surface (?) thereof facing the loop antenna coil. It appears from the illustration that the *recess portion* is provided on a *surface of the magnetic core* in an area facing the loop portion of the antenna coil. This description deems to conform in specification [0058], Fig. 2. Applicant is encouraged to implement this type of language in the interest of improving it's clarity.
5. Claims 2-4 are also rejected because they are dependent on claim 1.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 5, 7, 9-11, 13, 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Takahashi (US 2007/0001921).

Regarding claims 1, Takahashi disclose an antenna module in Fig. 1 and 10, comprising: a magnetic core member (45) stacked for a loop-shaped antenna coil (11) (Fig. 10) [0104], a recess (groove) (35B) is provided on a surface of the magnetic core member (45) in an area facing the loop portion of said antenna coil (11) (Fig. 10) [0108].

Regarding claim 5, Takahashi disclose an antenna module in Fig. 1 and 10, comprising: a loop-shaped antenna coil (11) formed on a base (10), said base stacked by a magnetic core member (45) (Fig. 10), said magnetic core member (45) is provided with a recess (35B) formed on a surface on which said base (10) is stacked (Fig. 10), at least in an area facing the loop portion of said antenna coil (11) (Fig. 10).

Regarding claim 9, Takahashi disclose that a metal shield plate (3) is provided with said magnetic core member (45) on a surface thereof opposite to the surface on which said base (10) is stacked (Fig. 10).

Regarding claim 10, Takahashi disclose in Fig. 3 that a signal processing circuit unit (24) (IC) electrically connected to said antenna coil (11) is mounted on said base (10) in (antenna module 1) (Fig. 3 and 10).

Regarding claim 13, Takahashi disclose a portable information terminal (antenna module 1) in Fig. 1, 3 and 10, comprising: a housing (21) (Fig. 3), a base (10) for supporting a loop-shaped antenna coil (11) (Fig. 10), a magnetic core member (45) stacked on said base (10), and a metal shield plate (3) stacked on said magnetic core member (45) are mounted in the housing (21) (Fig. 3), said portable information terminal (antenna module 1) characterized in that said magnetic core member (45) is provided with a recess (35B) formed on a surface on which said base (10) is stacked (Fig. 10), at least in an area facing the loop portion of said antenna coil (11) (Fig. 10).

Regarding claims 3, 7 and 15, Takahashi disclose in Fig. 11 that said recess (35) is dimples formed on the surface (46a) of said member at a plurality of positions (Fig. 11).

Regarding claim 11, Takahashi disclose in Fig. 3 that said signal processing circuit unit (24) is mounted on a surface of said base (2), facing said magnetic core member (4), and an opening is provided in said magnetic core member for accommodating said signal processing circuit unit (Fig. 3).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter

sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi.

Regarding claim 12 and 17, Takahashi disclose the antenna module comprising the magnetic core member is formed as a sheet by dispersing magnetic powders of Fe-Si-Al system into binder [0049], except Cr (chromium). Thus, it would have been obvious to one having ordinary skill in the art to recognize the Takahashi's antenna magnetic core by changing the conventional magnetic powder Cr (chromium) instead of AL (aluminum). Using the known technique dispersing the known material magnetic powder of (Fe-Si-Al) or (Fe-Si-Cr) into binder (layer) for reducing eddy-current loss would have been obvious to one of ordinary skill, See (Takahashi, [0104]).

Claims 2, 4, 6, 8, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Mizoguchi et al (USP. 6,593,841).

Regarding claims 2, 6 and 14, Takahashi disclose the antenna module as set forth in the claims except said recess is a ring-shaped groove formed in a region corresponding to the loop portion of said antenna coil. Mizoguchi disclose in Fig. 38 and 39 the ring-shaped groove formed in a region (layer 30) corresponding to the loop portion of said antenna coil. Thus, it would have been obvious to one having ordinary skill in the art to recognize the Takahashi's antenna-module by using the ring-shaped groove formed in the region corresponding to the loop portion of said

antenna coil as taught by Mizoguchi. Using the known technique by making the ring-shaped groove formed in the region corresponding to the loop portion of said antenna coil for reducing eddy-current loss would have been obvious to one of ordinary skill, See (Mizoguchi, Col. 23, Line 5).

Regarding claims 4, 8 and 16, Takahashi disclose the antenna module as set forth in the claims but does not go to details of a depth of said recess is less than 0.1 mm. Mizoguchi disclose in Fig. 39 the depth (W) of said recess is less than 0.1 mm (Mizoguchi, Col. 22, Line 50). Thus, it would have been obvious to one having ordinary skill in the art to recognize the Takahashi's antenna-module by making the depth of said recess is less than 0.1 mm as taught by Mizoguchi. Using the known technique by making the of said recess is less than 0.1 mm for reducing eddy-current loss would have been obvious to one of ordinary skill, See (Mizoguchi, Col. 23, Line 5).

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuc D. Tran whose telephone number is (571) 272-1829. The examiner can normally be reached on M-F Flex hours.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/595,279
Art Unit: 2821

Page 7

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC
December 26, 2007



THUY V. TRAN
PRIMARY EXAMINER